Key concepts include:

- the motions of Earth, the moon, and the sun;
- the causes for Earth's seasons;
- the causes for the phases of the moon;
- the relative size, position, age, and makeup of Earth, the moon, and the sun; and
- historical contributions in understanding the Earth-moon-sun system.

**ROTATION, REVOLUTION, TILT**

- Earth completes one revolution around the sun every 365 ¼ days.
- The moon revolves around Earth about once every month.
- Due to its axial tilt, Earth experiences seasons during its revolution around the sun.
- The phases of the moon are caused by its position relative to Earth and the sun. The phases of the moon include the new, waxing crescent, first quarter, waxing gibbous, full, waning gibbous, last (third) quarter, and waning crescent.

**SUN, MOON, EARTH -- SIZE & MAKEUP**

- The sun is an average-sized yellow star, about 110 times the diameter of Earth. The sun is approximately 4.6 billion years old.
- Our moon is a small rocky satellite, having about one-quarter the diameter of Earth and one-eighth its mass. It has extremes of temperature, virtually no atmosphere or life, and very little water.
- Earth is one of eight planets that revolve around the sun and comprise the solar system. Earth, the third planet from the sun, is one of the four terrestrial inner planets. It is about 150 million kilometers from the sun.
- Earth is a geologically active planet with a surface that is constantly changing. Unlike the other three inner planets (Mercury, Venus, and Mars), it has large amounts of life-supporting water and an oxygen-rich atmosphere. Earth's protective atmosphere blocks out most of the sun's damaging rays.

**HISTORICAL CONTRIBUTIONS**

- Our understanding of the solar system has changed from an Earth-centered model of Aristotle and Ptolemy to the sun-centered model ofCopernicus and Galileo.
- The NASA Apollo missions added greatly to our understanding of the moon.
- Our understanding of the sun, moon, and the solar system continues to change with new scientific discoveries.